$DEMIDOV, V.P.$

AID Nr. 980-3   31 May

FIELD STRUCTURE IN A PLASMA-FILLED WAVEGUIDE (USSR)

Demidov, V. P. Zhurnal tekhnicheskoy fiziki, v. 33, no. 4, Apr 1963, 406-411.

S/057/63/033/004/006/021

The magnetic field structure is analyzed for both ordinary and extraordinary waves at frequencies sufficiently close to the ionic cyclotron frequency to necessitate accounting for the gyrotropic effect in plasma, whereby the electromagnetic waves travel in a helical path. A circular, ideally conducting waveguide is assumed to contain a uniform axial magnetic field and plasma density high enough to sustain a TE wave. The gyrotropic effect is considered for the cases of TE_{0n} and TE_{1n} modes; an analysis of the transverse field structure was made in each case. The TE_{11} mode, predicted in this paper, was not observed in an experiment conducted earlier by other authors in which the existence of circularly polarized waves in plasma waveguides was demonstrated. The reason for this discrepancy is not clear.   [FVP]

Card 1/1

L 12913-63   EWT(1)/EWG(k)/BDS/ES(w)-2   AFFTC/ASD/ESD-3/AFWL/SSD
Pz-4/Pi-4/Po-4/Pab-4   AT
ACCESSION NR: AP3001329   S/0057/63/033/006/0703/0709   76

AUTHOR: Demidov, V. P.; Frank-Kamenetskiy, D. A.

TITLE: Dissipation by collisions in a plasma at cyclotron frequency overtones

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 33, no. 6, 1963, 703-709

TOPIC TAGS: plasma, absorption in hot plasmas

ABSTRACT: One of the authors has shown that the index of refraction of a hot
plasma for waves propagating transversely to a magnetic field has singularities at
the harmonics of the cyclotron frequency (V. P. Demidov, DAN SSSR, 139, 1342, 1961).
In the present paper the authors consider the contribution of electron collisions
to the absorption of plane electromagnetic waves having frequencies near these har-
monics and propagating transversely to a uniform magnetic field in an infinite
homogeneous plasma. Only waves polarized with the electric vector parallel to the
magnetic field are considered. The dielectric tensor used in the present calcula-
tions is taken from the earlier paper, in which collisions were not taken into ac-
count. By retaining only the term that is large in the neighborhood of a given
overtone of the electron cyclotron frequency and introducing the approximation of
"large space dispersion" (wavelength small compared with the distance traveled by
an electron as the result of its thermal motion during one cyclotron period divided
Card   1/2

L 12913-63
ACCESSION NR; AP3001329

by the order of the harmonic), an expression is obtained for the index of refraction
as a function of the frequency of the wave. Collisions are now taken into account
by regarding the frequency in this expression as a complex quantity with its imagi-
nary part equal to the collision frequency. This is assumed to be equivalent to
taking collisions into account in the kinetic equation by adding a term equal to
the product of the collision frequency by the electron distribution function. The
absorption is obtained from the resulting complex index of refraction. A mean ab-
sorption coefficient is obtained by averaging over all frequencies. The ratio of
this mean absorption coefficient to the known collision absorption coefficient of
a cold plasma is large compared with unity whenever the approximations involved in
the present calculation (large space dispersion) are valid. In a magnetic field
of 1000 oe the present calculations should be valid for electron temperatures above
20 eV. In the same magnetic field, similar calculations involving ionic collisions
should be valid at ion temperatures of the order of one keV. Orig. art. has: 35
formulas and 2 figures.

ASSOCIATION: none

SUBMITTED: 28May62   DATE ACQ: 01Jul63   ENCL: 00

SUB CODE: 00   NO REF SOV: 005   OTHER: 002
Card 2/2

AUTHOR: Demidov,V.P.; Frank-Kamenetskiy, D.A.

TITLE: Relativistic dissipation in a plasma at harmonics of the cyclotron frequency

TOPIC TAGS: plasma, dissipation, cyclotron resonance

ABSTRACT: V.P.Demidov (Doklady AN SSSR, 139, 1343, 1961) has shown that when relativistic effects and collisions can be neglected, the refractive index of a plasma for waves propagating transversely to an external magnetic field is singular at the cyclotron frequency and its harmonics. In the present paper the effect of the relativistic variation of the cyclotron frequency with the thermal speed of the electrons is taken into account by averaging the dielectric constant over a Maxwell distribution of electron velocities. In the averaging only one component of the electron velocity is varied; this makes the result uncertain by a factor of 2 or 3, but the order of magnitude should be correct. It is found that the singularities in the refractive index reduce to finite peaks, with the real and imaginary parts of the same order of magnitude. The peaks have heights of the order $(F_p/F_c)^{2/3}/N_{ts}$

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L 18478-63
ACCESSION NR: AP3005500

and widths of the order $F_p^{2/3}F_c^{1/3}V_t$, where F_p is the plasma (Langmuir) frequency, F_c is the cyclotron frequency, V_t is the thermal velocity of the electrons in units of the velocity of light, and s is the order of the harmonic. These results are valid only for a dense plasma $(F_p \gg F_c)$ which is so hot and in so strong a magnetic field that collisions may be neglected. The mechanism of the absorption process is discussed briefly. Orig.art. has: 25 formulas and 1 figure.

ASSOCIATION: none

SUBMITTED: 07Jul62   DATE ACQ: 06Sep63   ENCL: 00

SUB CODE: PH   NO REF SOV: 014   OTHER: 006

Card 2/2

DEMIDOV, V.P.

Field structure in the cross section of a plasma-filled wave
guide. Zhur. tekh. fiz. 33 no.4:406-411 Ap '63.   (MIRA 16:9)
(Magnetic fields) (Wave guides) (Plasma (Ionized gases))

DEMIDOV, V.P.; FRANK-KAMENETSKIY, D.A.; YAKIMENKO, V.L.

Magnetic sound in a plasma with thermal motion. Part 2.
Absorption of magnetoacoustic waves in a plasma. Zhur. tekh.
fiz. 33 no.4:398-405 Ap '63.   (MIRA 16:9)
        (Plasma (Ionized gases)) (Magnetoacoustic effect)

DEMIDOV, V.P.

Relativistic dissipation on cyclotron harmonics in a plasma.
Zhur. tekh.fiz. 33 no.8:915-921 Ag '63.   (MIRA 16:11)

38875

S/056/62/042/006/047/047
B104/B112

24.6600

AUTHORS: Demidov, V. S., Kirillov-Ugryumov, V. G., Ponosov, A. K.,
             Protasov, V. P., Sergeyev, F. M.

TITLE: Elastic scattering of π⁻ mesons with energies of 5-12 Mev
             by carbon nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,
             no. 6, 1962, 1687-1688

TEXT: The experiments were made with a propane bubble chamber (dimensions,
370 by 140 by 100 mm³) exposed to the pion beam of the synchrocyclotron
of the OIYaI. 19,576 π⁻ mesons, identified from the characteristic star
at the end of their path, were selected to measure the angle of singly
scattered π⁻ mesons projected onto the plane of the film. 81 π⁻ meson
decay events were registered between 15 and 180°. The sign of the
potential of the system pion - carbon nucleus can be determined directly
from the difference between the angular distributions of π⁺ and π⁻ mesons.
There is 1 table.

Card 1/2

DEMIDOV, V.S.; TSYBUL'SKIY, P.F.

Removal of dust from the housing of a pulverized coal feeding
device operating on compressed air. Energetik 11 no.4:11
Ap '63.   (MIRA 16:3)
            (Boilers)   (Furnaces)

S/056/63/044/004/004/044
B102/B136

AUTHORS: Demidov, V. S., Kirillov-Ugryumov, V. G., Ponosov, A. K.,
              Protasov, V. P., Sergeyev, F. M.

TITLE: Absorption of stopped negative pions in carbon

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
              no. 4, 1963, 1144 - 1146

TEXT: Previously taken photographs (ZhETF, 42, 1689, 1962) of interactions
of slow π^- in a 4-liter propane bubble chamber were now used to investigate
the pion absorption by carbon nuclei. Among 3500 π^- stops there were 1130
selected for an analysis of the pion star distribution with respect to
prongs, and 1180 two-pronged stars for investigating the distribution with
respect to the angle between the prongs. If one assumes (Phys. Rev. 84,
258, 1951) that π^- are absorbed only by nucleon pairs (pn, pp), the ab-
sorption probability may be calculated. On comparing the experimental
results with those calculated by the method of least squares, the π^- ab-
sorption probability by a pn-pair amounts to 70 - 80%, that for a pp-pair
to 30 - 20%, and the probability of an intranuclear collision is 60 - 80%.

Card 1/2

Absorption of stopped negative...   S/056/63/044/004/004/044
                                                 B102/B186

The mean number of prongs was found to be 0.84 and the distribution of stars
with respect to the angle between the prongs had a sharp maximum at about
180°. The results speak in favor of the two-nucleon absorption mechanism.
The absorption probability is energy-independent in the range 0 - ~200 Mev.
There are 1 figure and 1 table.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Institute
             of Physical Engineering)

SUBMITTED: November 2, 1962

Card 2/2

ACCESSION NR: AP4031142   S/0056/64/0046/004/1220/1225

AUTHORS: Demidov, V. S.; Verebryusov, V. S.; Kirillov-Ugryumov, V. G.; Ponosov, A. K.; Sergeyev, F. N.

TITLE: Absorption of negative pions stopped in propane

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1220-1225

TOPIC TAGS: pion absorption by carbon, two nucleon model, many nucleon model, nuclear structure, bubble chamber, propane bubble chamber, secondary particle angular distribution, secondary particle energy spectrum, np pair absorption, pp pair absorption

ABSTRACT: To compare the effectiveness of pion absorption in carbon by the two-nucleon mechanism against the effectiveness of other possible mechanisms, a four-liter propane bubble chamber was used to obtain the energy spectra of the secondary singly-charged particles resulting from the absorption of slowing-down pions by carbon and to

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ACCESSION NR: AP4031142

obtain the distributions with respect to the angle between the
prongs of the pion stars. Bubble-chamber photographs from an
earlier investigation of the scattering of low-energy pions (ZhETF
v. 42, 1687, 1962) were used as the source material. The estimates
based on the energy spectra show that the maximum possible contribu-
tion of pion absorption by a complex of several nucleons ($\geq$ 4) does
not exceed 20%. A Monte Carlo electronic-computer analysis of more
than 2000 interactions has shown that the experimental data agree
with the two-nucleon mechanism, and that the probability of absorp-
tion of the pion by an np pair is two or three times larger than
the probability of absorption by a pp pair; the latter agrees with
the author's earlier results (ZhETF v. 44, 1144, 1963). "In con-
clusion, the authors are indebted to Professor A. I. Alikhanyan and
L. B. Kotenko, whose efforts made this experiment possible, to V. P.
Protasov who participated in the early stage of the work, to E. A.
Savina and M. G. Gornov for help with the measurements, and to the
entire mathematics group of Institut tecreticheskoy i eksperimen-

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ACCESSION NR: AP4031142

tal'noy fiziki (Institute of Theoretical and Experimental Physics)
for the laborious calculations." Orig. art. has: 7 figures and 3
tables.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow
Engineering Physics Institute)

SUBMITTED: 25Oct63   DATE ACQ: 07May64   ENCL: 00

SUB CODE: PH   NO REF SOV: 012   OTHER: 005

Card 3/3

L 58953-65   EPF(c)/EWT(1)/EEC(t)   P1-4   IJP(c)   GG/WW
ACCESSION NR: AT5010455   UR/3138/64/000/273/0001/0008   3
29
B+1

AUTHORS: Verebryusov, V. S.; Veselovskiy, G. S.; Grashin, A. F.;
Demidov, V. S.; Kuznetsov, Ye. V.; Kuznetsov, Ye. P.; Ponosov, A. K.;
Protasov, V. P.; Sergeyev, F. M.; Shalamov, Ya. Ya.

TITLE: Data on pp resonance with Q = 148 MeV

SOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy
energii. Institut teoreticheskoy i eksperimental'noy fiziki. Doklady
no. 273, 1964, Dannyye o pp-rezonanse s Q = 148 Mev, 1-8

TOPIC TAGS: proton proton resonance, diproton resonance, pion nucleon
resonance, excitation energy

ABSTRACT: The authors present data on a possible new photon resonance
with excitation energy 148 MeV. The photographs were obtained with a
17-liter bubble chamber filled with a freon mixture (without magnetic
field), using the extracted beam of π^+ mesons of the OIYaI (Joint In-
stitute of Nuclear Research) synchrocyclotron with energy E_0 = 80 MeV.

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L 58953-65

ACCESSION NR: AT5010455

Absorption of positive pions with formation of 1, 2, and 3 heavy particles (p, d, etc.) was investigated. The meson energy at the instant of absorption was 60 ± 20 MeV. Distributions of the event with production of two particles shows peaks at excitation energy values of 148 and 128 MeV. The same spectrum plotted for more symmetrical stars shows the 148 MeV peak more clearly. It is shown that the spectra can contain, besides the distribution with respect to the diproton mass, also components due to pd, dd, and similar stars, which can be mistaken for pp stars. The 128-MeV peak may be due to the presence of pd stars. The results indicate the possible existence of a diproton resonance with excitation energy 143 ± 3 MeV and width ~ 5 MeV, and also a pd resonance with approximate excitation energy 143 ± 3 MeV and width ~ 5 MeV. Such resonances could be observed in the presence of πN resonance with mass 938 ± 150 MeV, producing 'hypernuclei' by interacting with other nucleons. Work on a direct observation of the possible new πN resonance is continuing. 'The authors thank I. A. Alikhanov for a discussion of the results.' Original article has: 2 figures

Card 2/3

L 50953-65
ACCESSION NR: AT5010455

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki GKAE (Institute of Theoretical and Experimental Physics, GKAE)

SUBMITTED: 01Aug64   ENCL: 00   SUB CODE: NP

NR REF SOV: 001   OTHER: 002

Card 3/3

VESELOVSKIY, G.S.; GRASHIN, A.F.; DEMIDOV, V.S.; KUZNETSOV, Ye.V. [deceased];
KUZNETSOV, Ye.P.; PONOSOV, A.K.; PROTASOV, V.P.; SERGEYEV, F.M.;
SHALAMOV, Ya.Ya.

Production of slow π-mesons on light nuclei, and $\pi\pi$-interaction.
IAd. fiz. 2 no.3:496-500 S '65.

(MIRA 18:9)

1. Institut teoreticheskoy i eksperimental'noy fiziki
Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.

L 11913-66   EWT(m)/T/EWA(m)-2
ACC NR: AP6001156   SOURCE CODE: UR/0367/65/002/003/0496/0500

AUTHOR: Veselovskiy, G. S.; Grashin, A. F.; Demidov, V. S.; Kuznetsov, Ye. P.; Ponosov,
A. K.; Protasov, V. P.; Sergeyev, F. M.

ORG: Institute of Theoretical and Experimental Physics, GKIAE (Institut teoreticheskoy i
eksperimental'noy fiziki)

TITLE: Production of slow pi mesons on light nuclei and the pi-pi interaction

SOURCE: Yadernaya fizika, v. 2, no. 3, 1965, 496-500

TOPIC TAGS: pi meson, pion pion interaction

ABSTRACT: The object of the study was to find the possible resonance states in a system
composed of two π-mesons at low energies:

$$Q = M_{\pi\pi} - 2\mu = [(\omega_{\pi_1} + \omega_{\pi_2})^2 - (p_{\pi_1} + p_{\pi_2})^2]^{1/2} - 2\mu \leqslant \mu$$

μ being the mass of a π-meson. The statistical material was obtained by studying the
production of slow $\pi^{\pm}$ mesons upon collision of π^- mesons (initial momentum 2.8 GeV/sec)
with nuclei of a freon mixture in a 17- and 200-liter bubble chambers. In analyzing the films,
all those cases were selected which involved interaction between π-mesons and the nuclei of
the working liquid, resulting in the formation of two or more slow π-mesons which stopped in
the working substance of the chamber. The Q distributions of the bipion in the range
Q < 100 MeV were obtained. The distribution for $\pi^+\pi^-$ pairs differs from that for $\pi^+\pi^+$ and

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L 11913-66

ACC NR: AP6001156

$\pi^-\pi^-$ pairs; this may be explained by the presence of a strong $\pi\pi$ interaction in the isotopic state T = 0.   Orig. art. has: 5 figures.

SUB CODE: 20 / SUBM DATE: 03Jul64 / ORIG REF: 004 / OTH REF: 001.

Card 2/2

ACC NR: AT7008896   SOURCE CODE: UR/0000/66/000/000/0041/0047

AUTHOR: Demidov, V. S.; Kirillov-Ugryumov, V. G.; Ponosov, A. K.; Protasov, V. P.;
Sergeyev, F. M.

ORG: none

TITLE: Elastic scattering of Pi-mesons by carbon at energies of 5-22 Mev

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Fizika elementarnykh chastits,
1966, 41-47

TOPIC TAGS: elastic scattering, pi meson, synchrocyclotron, angular distribution
SUB CODE: 20

ABSTRACT: The authors state that in their present undertaking they have succeeded
to considerable extent in overcoming the procedural difficulties which have hitherto
hindered the study of interactions of slow pi-mesons with complex nuclei. An
investigation was made of the elastic scattering of pi-mesons of both signs with
energies of 5-22 Mev by carbon C^{12} nuclei. The pi-mesons were recorded in propane
bubble chambers exposed to pi-meson beams of the synchrocyclotron of the Joint
Institute for Nuclear Research. The purpose of the work was to investigate properties
of the potential of the nuclear interaction of a pi-meson with a light nucleus.
Selected for the investigation were 8,727 positive and 19,576 negative pi-mesons
stopped in the chambers. Certain corrections were made in the experimental data
for computing the cross sections. The corrected statistical material was used to

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UDC: 539.1
0929 [70]

ACC NR: AT7008896

obtain the angular distributions of the elastic scattering of pi-mesons. The article lists the experimental values of the differential cross sections for energies of 5-8, 8-15, and 15-22 Mev in the case of positive mesons and 5-8 and 8-15 Mev for negative mesons. A phase-shift analysis was made by the least-squares method on a "Ural" digital computer and a comparison was made of the angular distributions for positive and negative pi-mesons in identical energy ranges. It was established that the potential of the nuclear interaction between a pi-meson and a carbon nucleus at energies 5-22 Mev corresponds to repulsive forces. The phase shifts and potential value which were found agree with data obtained in the investigation of pi-meson atoms and elementary meson-nucleon scattering. The authors express their thanks to A. I. Alikhanyan, L. P. Kotenko, Ye. P. Kuznetsov, and A. V. Samoylov for their help in the work and to Z. S. Galkina, V. A. Yeliseyeva, and Z. A. Volobuyeva for taking part in the measurements. Orig. art. has: 2 formulas and 3 tables. [JPRS]

Card 2/2

ACC NR: AT7008898

SOURCE CODE: UR/0000/66/000/000/0076/0082

AUTHOR: Alikhanyan, A. I.; Aleksanyan, A. S.; Verebryusov, V. S.; Voremeyev, M. M.; Demidov, V. S.; Kirillov-Ugryumov, V. G.; Protasov, V. P.; Ponosov, A. K.; Sergeyev, F. M.

ORG: none

TITLE: Bubble chamber designed to operate in a magnetic field

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Fizika elementarnykh chastits, 1966, 76-82

TOPIC TAGS: austenite steel, bubble chamber, pi meson, synchrotron, photography

SUB CODE: 20, 14

ABSTRACT: The article describes a bubble chamber with an effective volume of 200 liters made of nonmagnetic austenite 1Kh18N9T steel and consisting of a permanent outer vessel and the working chamber proper located inside it. The design of the inner chamber, outer vessel, and expander is generally similar to that described in an earlier article by A. V. Bogomolov et al. The upper lid of the permanent vessel has six windows for photography. Differential three-stage valves are used for increasing pressure and for depressurization in the chamber. The working space of the chamber is illuminated by eight out of sixteen IFK-120 flash bulbs mounted in pairs on a special panel; the lighting system design also permits the use of IFP-4000 bulbs. The photographing is done on two standard aerial photographic films, with a sensitivity of 1200 GOST [Gosudarstvennyy Obshchesoyuznyy

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UDC: 539.1

ACC NR: AT7008898

Standart; All-Union State Standard] units and 80 mm width, by two "Gidrorussar-4"-type objectives. During operation of the chamber chromatic aberration was observed, resulting in a ghost effect in the particle track image. This was eliminated by photographing in monochromatic light through an experimentally chosen orange light filter. The chamber is heated by three 2-kw electric heaters, with one of the heaters set directly on the inner chamber. There are two versions of thermostat system control. The first employs a standard contact thermometer mounted in the chamber casing. The second version employs an electrocontact manometer. The article includes a block diagram of the chamber's control circuit. The chamber was tested in operation with various working fluids: propane, a mixture of Freon-12 and Freon-13, a propane-ethane mixture, and propane-Freon and propane-ethane-Freon mixtures. The chamber is at present set up in an MS-12 magnet in the path of a beam of negative pi-mesons, 4 Gev in energy, of the proton synchrotron of ITEF [Institut teoreticheskoy i eksperimental'noy fiziki; Institute of Theoretical and Experimental Physics]. The actuation cycle of the chamber is 4 seconds. The authors express their thanks to Ye. V. Kuznetsov, Ye. P. Kuznetsov, M. G. Gornov, S. M. Ryumin, A. F. FAlin, and E. S. Levonyan for their assistance and "valuable advise" and to Yu. A. Budagov for "useful discussions". Orig. art. has: 8 figures. [JPRS]

Card 2/2

IVANOV, Ye.P.; DEMIDOV, V.V.; BORISOV, Yu.S., redaktor; NOSKIN, R.A.,
kandidat tekhnicheskikh nauk, retsenzent; MATVEYEVA, Ye.N.,
tekhnicheskiy redaktor

[Quality control of repair of metalworking equipment; reference
manual] Kontrol' kachestva remonta metalloobrabatyvaiushchego
oborudovaniia; spravochnoe posobie. Pod red. IU.S.Borisova. Moskva,
Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1954.
190 p.   (MLRA 7:10)
        (Metalworking machinery--Maintenance and repair)

VERTYACHIKH, V.G., inzh.; DEMIDOV, V.Ya., inzh.; PAK, P.B., inzh.

Detection and removal of electric detonators and live cartridges.
Bezop.truda v prom. 6 no.6:18-19 Je '62.   (MIRA 15:11)

1. Vostochnyy nauchno-issledovatel'skiy institut po bezopasnosti
rabot v gornoy promyshlennosti.
                    (Detonators—Safety measures)
                    (Electronic apparatus and appliances)

DEMIDOV, Ya.F., kand.tekhn.nauk

Calculation of the temperature fields of steam and gas turbine elements under nonstationary operating conditions. Energomashinc-stroenie. 11 no.2:32-35 F '65.   (MIRA 18:4)

ALEKSEYEV, M.M.; DEMIDOV, Ye.F.

Semiautomatic machine for cutting blands. Ogneupory 27 no.4:
192-195 '62.
(MIRA 15:4)

1. Shchekinskiy shamotnyy zavod.
(Refractories industry—Equipment and supplies)

DENISOV, Yu.

Dana, the granary of Moravia. Vokrug sveta, no 7, 1952.

1. DEMIDOV, Yu.

2. USSR (600)

4. Czechoslovakia – Mountains

7. "Cliff cities." Vokrug sveta, no. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, _____April_____ 1953, Uncl.

1. DEMIDOV, Yu.

2. USSR (600)

4. Riesengebirge - Description and Travel

7. Krkonose. Vokrug sveta No. 2, 1953.

9. **Monthly List of Russian Accessions**, Library of Congress,   May   1953. Unclassified.

DEMIDOV, YU. P.

Apparatus for continuous Machine.
Yu. ... ..., Yu. P. ...
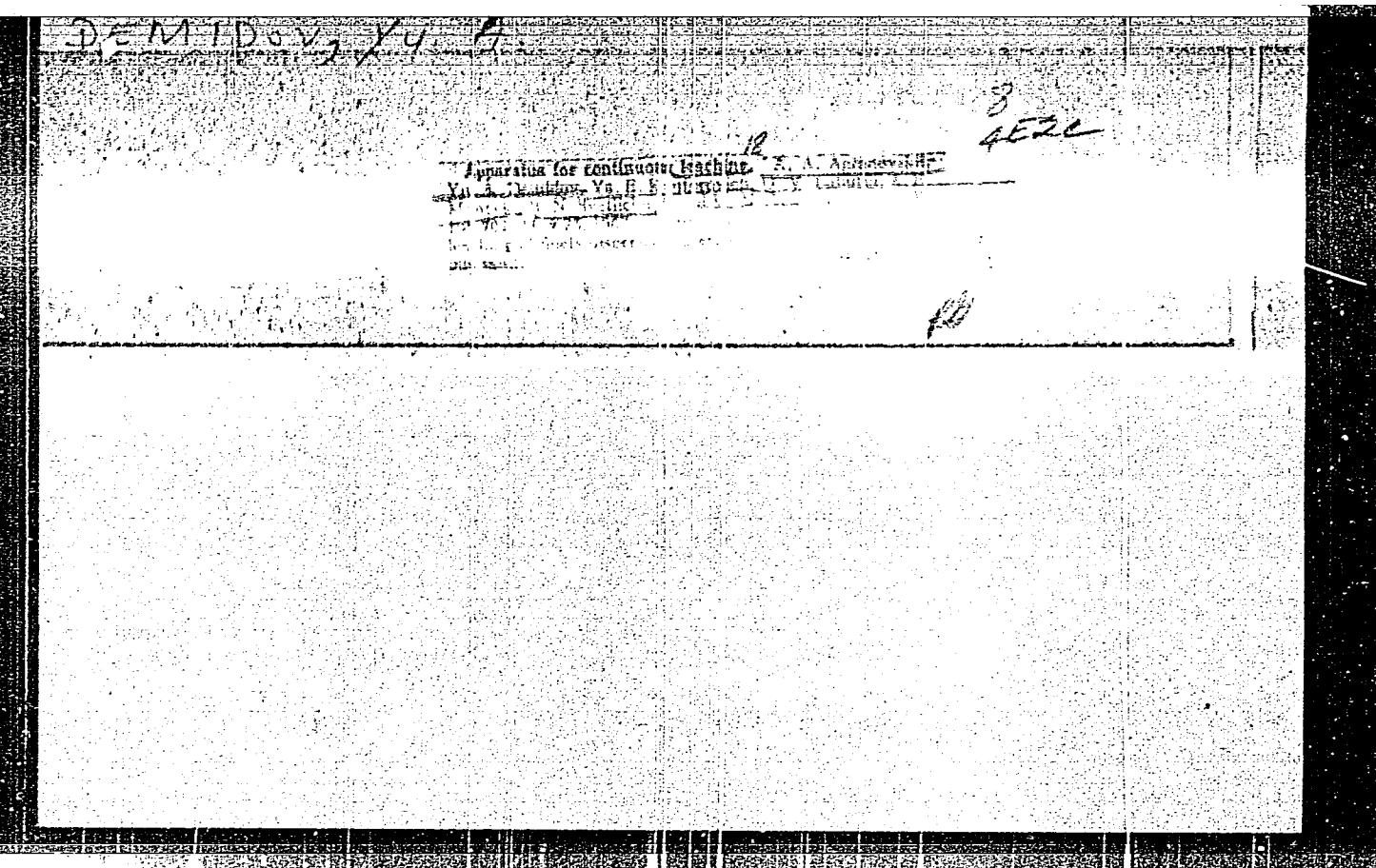
DEMIDOV, Yu.L.

Vibration and sound insulation of pumping installations in the basements of residential houses. Vod. i san. tekh. no.10:37-39 O '60.

(MIRA 13:11)

(Pumping machinery--Soundproofing)

DEMIDOV, Yu.M.

      Machine for mitering muntins. Der. prom. 10 no.7:26-27 Jl
      '61.   MIRA 14:7)

    1. Leningradskiy derevoobrabatyvayushchiy zavod No.1.
                     (Woodworking machinery)

DEMIDOV, Yu.M.

Three-spindle wood milling machine for cutting mortises. Der.
prom. 11 no.4:23-24 Ap '62.   (MIRA 15:4)

1. Leningradskiy derevoobrabatyvayushchiy zavod No.1.
              (Woodworking machinery)

DEMIDOV, Yu.M.

Processing broken veneer on the DU-2 chopping machine. Der. prom.
13 no.4:17-19 Ap '64. (MIRA 17:4)

DEMIDOV, Yu.M.

Grinding broken veneer on the DS-3 chipper. Der. prom. 13 no.9:
25-27 S '64.
(MIRA 17:11)

TSIKINOVSKAYA, S.L.; DEMIDOV, Yu.N.; FEDOROVA, Ye.M.

    Potentialities for reducing the cost of cast iron. Stal' 23
    no.10:942-944 O '63.   (MIRA 16:11)

AUTHOR: Demidov, Yu.S., Engineer   SOV/122-59-3-33/42

TITLE: "Gear Pumps" (Shesterennyye Nasosy) by Yudin, E.M.,
          Oborongiz, 1957

PERIODICAL: Vestnik Mashinostroyeniya, 1959, Nr 3, pp 85-86 (USSR)

ABSTRACT: Highly unfavourable review, supported by 8 Soviet
          references.

Card 1/1

DEMIDOV, Yu.S., inzh.

Seizing of valves. Vest.mashinostr. 42 no.11:39-42 N '62.

(MIRA 15:11)

(Valves)

DEMIDOV, Yu.S., starshiy prepodavatel'

Investigating the effect of valve-pair materials on the
seizing of valves. Izv.vys.ucheb.zav.; mashinostr.
no.8:59-66 '62.   (MIRA 15:12)

1. Voskovskoye vyssheye tekhnicheskoye uchilishche imeni
Baumana.

(Valves)

S/145/60/00u/008/001/008
D211/D304

AUTHORS: Kulagin, A.V., Candidate of Technical Sciences, and
            Demidov, Yu.S., Senior Lecturer

TITLE: Hydraulic transmission with throttle control for
            several hydraulic motors, driven by a single pump with
            proportional pressure

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroye-
             niye, no. 8, 1960, 17 - 24

TEXT: In a usual type of hydraulic transmission for several hydrau-
lic motors driven by one pump, containing throttles, reversing val-
ves and a by-pass valve, the efficiency is low at low speeds and
loads. The system shown in Fig. 2 is more efficient. The by-pass
valve is replaced by a pressure regulator (14), whose upper cavity
is connected with the delivery pressure of the pump (13) and its
lower cavity (through pressure switch valves 15 and 16) with the in-
let pressure of the motor whose load at the given instant requires
the highest pressure. The author derives a formula for the efficien-

Card 1/2

On the problem of improving ...

S/145/61/000/010/003/008
D221/D304

all dimensions of the units. The hydraulic transmission of the
(E-153) excavator is an example of an attempt to improve the effi-
ciency of throttle controls. This is achieved by feeding the motors
with proportional pressure. It results in an increase of efficiency
coefficient by $\frac{M'_{2max}}{M'_2}$ times when compared to constant pressure opera-
tion. However, the new arrangement leads to a loss of some advan-
tages of the constant pressure units, when there is no independence
of work for each motor. The above disadvantages are eliminated in a
setup shown in Fig. 3, where the pump pressure is proportional to
the maximal demand. The speed of motors, 2 and 3 is controlled by
throttles 4 and 5, whereas their rotation can be reversed by valves
6 and 7. The specified speed is ensured by controllers 8 and 9. A
detailed description is given of the mode of operation of this ar-
rangement. The efficiency coefficient is increased when the diffe-
rence between the torques of both motors decreases. The former can
be further improved when a variable delivery pump is used. Compa-
rison of the efficiency of transmission with proportional pressure

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On the problem of improving ...

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to that with a variable delivery pump unit reveals that the latter arrangement results in a greater running coefficient of efficiency. This is further improved when a pressure regulator is used instead of an overflow valve. This type of operation produces minimum losses and, therefore, requires the least volume of oil which ensures small dimensions of the installation. It permits also the independent operation of each motor. There are 5 figures and 3 Soviet-bloc references.

ASSOCIATION: MVTU im. N. E. Baumana (MVTU im. N. E. Bauman)

SUBMITTED: March 24, 1961

Card 3/3

DEMIDOV, Yu. S., inzh.

"Manufacture of hydraulic drives" by S. L. Anan'ev, M. A.
Elizavetin. Reviewed by IU. S. Demidov. Vest. mashinostr.
42 no.12:82 D '62.   (MIRA 16:1)

(Oil-hydraulic machinery)
(Anan'ev, S. L.)
(Elizavetin, M. A.)

DEMIDOV, Yu.S., starshiy prepodavatel'

Hydraulic and electrohydraulic feed control for coal cutters and cutter-loaders. Izv. vys. ucheb. zav.; mashinostr. no.2: 203-207 '63. (MIRA 16:8)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni Baumana.

BC

$\mathscr{A}-3$

PROCESSING AND PROPERTIES INDEX

Action of aromatic diazo-compounds on unsaturated compounds. III. A. P. Terentev and A. N. Dombrovski (J. Gen. Chem. Russ., 1937, 7, ...

ASM-ILA   METALLURGICAL LITERATURE CLASSIFICATION

KOZLOVSKAYA, O.L.; DEMIDOVA, A.A. [deceased]

Materials on the ecology of field mouse fleas in Khabarovsk
Territory. Izv.Irk.gos.nauch.-issl.protivochum.inst. 17:59-
64 '58.   (MIRA 13:7)
    (KHABAROVSK TERRITORY--FLEAS) (PARASITES--FIELD MICE)

CA

25

Reddish brown sulfur dye. N. S. Tikhonov and A. A. Demidova. Russ. 53,228, May 31, 1938. The dye is prepd. by heating to 250-60° 1,5-dinitronaphthalene with $Na_2S_{1.75}$ in the presence of $CuSO_4$.

DEMIDOVA, A. A.

"Qualitative Reaction for Diolefines," <u>Iz. Ak. Nauk SSSR, Otdel. Khim. Nauk,</u>
No. 1, 1941.

DEMIDOVA, A.A.

128-58-6-14/17

AUTHORS: Demidova, A.A., Petrova, E.V., and Kolesnikova, V.S. Engineers

TITLE: Conference on the Crystallization of Metals (Soveshchaniye po kristallizatsii metallov)

PERIODICAL: Liteynoye Proizvodstvo, Nr 6, pp 30-31 (USSR)

ABSTRACT: The conference on the problem of crystallization of metals and alloys, convened 28-31 Jan 1958 at the Institut Mashinovede- niya AN SSSR (Institute of Mechanical Engineering AS USSR), was the 4th and final conference on the general problem of the the- ory of foundry processes. About 400 delegates of scientific research institutes, industry, higher technical schools, and other organizations of 26 towns participated. Professor Chikl' of the German Democratic Republic and Professor N.I. Khvorinov of Czechoslovakia were present. Academician V.I. Dikuchin opened the session and outlined the present state of theoretical know- ledge and the tasks of the conference. The conference heard the following reports: B.B. Gulyayev, "The Modern State and the Tasks of the Study of Metal Crystallization"; N.N. Sirota, " The Mechanism of the Crystallization Process"; K.P. Bunin and Yu.N.

Card 1/6   Taran, "Eutetic Cystallization of Grey Cast Iron"; D.S. Kame-

128-58-6-14/17

Conference on the Crystallization of Metals

netskaya, B.Ya. Lyubov, K.M. Malkin, and G.P. Ivantsov, on
the existing theories of the origin and growth of crystals;
B.Ya. Lyubov, "Calculation of the Rate of Solidification of
Metal in Large Volumes"; V.K. Novitskiy, A.V. Mikul'chik, and
V.V. Blinov, "Influence of Inner Crystallizers on the Struc-
ture and Quality of Steel Ingots"; N.I. Khvorinov, "On Cry-
stallization of Steel"; V.I. Lapitskiy, N.I. Stupar', K.P.
Rudichev, V.L. Oleksenko and A.I. Marinov, "Some Ways of De-
creasing the Heterogenity of Large Rimming Steel Ingots up
to 20 tons (the use of bottle-shaped ingot molds with spheric-
al covers was recommended); I.L. Mirkin, "Theory of the Cry-
stallization of Solid Phases in Complex Alloys; A.G. Spasskiy,
"The Basic Factors Influencing the Structure of Ingots"
(results of own studies on non-ferrous alloys); M.V. Mal'tsev,
on ways of improving the structure and quality of cast metal
by modification; O.N. Magnitskiy, A.A. Demidova and B.B. Gulya-
yev, "The Effect of the Alloy Composition on the Conditions
of Crystallization and the Properties of Castings"; Ya.V.
Grechnyy, on the origin and growth of crystals in two-metal
Card 2/6   alloys; V.Ye. Neymark, on the effect of modifiers (magnesium,

Conference on the Crystallization of Metals   128-58-6-14/17

cerium, circonium, titanium, boron) on the deformation of the
crust and the rate of solidification of carbon-iron and non-
ferrous alloy ingots; D.S. Kamenetskaya, E.P. Rakhmanova, and
Ye.Z. Spektor, on the effect of active non-soluble particles,
and the small quantity of surface-active components accounting
for the absence of undercooling during the crystallization of
alloys under actual conditions; I.I. Gorynov, on the results
of investigation of the effect of modifications on the structure
and physico-mechanical properties of high-alloyed steel; V.G.
Gruzin, F.I. Yamshanov and N.P. Neverovskaya, on the problems
of the formation of the primary structure of structural steel,
and the effect of the pouring temperature; L. I. Morozenskiy
and O.D. Zigel', "The Effect of the Movement of Metal in the
Liquid Core on the Crystallization of Steel Ingots and Castings";
A.P. Pronov, "The Crystallization of a Continuous Ingot and Its
Effect on the Properties of Liquid Steel"; G.P. Ivantsov,
"Thermic Stresses and Deformations in the Crust on a Crystalli-
ing Ingot"; I.N. Guglin, A.A. Novikova, and B.B. Gulyayev,
"Crystallization and Mechanical Properties of Steel at High
Temperatures"; I.A. Shapranov and E.V. Petrova, "Investigation
of the Crystallization of Cast Iron Treated by Magnesium"; B.S.

Card 3/6   Mil'man, on the increased surface tension, decreased content of

Conference on the Crystallization of Metals   128-58-6-14/17

gases in metal, and increased undercooling degree being
the necessary conditions for the formation of nodular graphite
in cast iron; G.F. Balandin, "Crystallization of Cast Iron",
with an attempt at mathematical interpretation of the theory
of the formation of the structure of castings; I.I. Khoroshev
and I.Ye. Lev, on the mechanism of the origin of the centers of
crystallization of graphite in white cast iron castings, and
the influence of the crystallization rate on the distribution
of alloying elements between the phases; Ya.N. Malinochka and
A.A. Zhukov, on the intercrystalline segregation of silicon,
and its effect on the structure-formation of cast iron; E.Ya.
Khrapkovskiy, on the primary crystallization and properties
of quasi-eutectical grey cast iron; Professor Chikl' illustrated
the theory of graphite crystallization in cast iron by the re-
sults of metallographic studies; F.F. Khimushin, on new heat-
resistant steels and on the effect of crystallization conditions
on their properties; F.V. Aksenov, P.F. Lashko and E.Ya. Rodina,
on the peculiarities of the structure-formation during the soli-
dification of heat-resistant steels while casting with cast
models; I.V. Sally, on the laws of the crystallization of binary
iron-carbon and non-ferrous alloys at strong undercooling (Lead,
Card 4/6   containing super-saturated carbon, and iron and bismuth solutions,

Conference on the Crystallization of Metals   128-58-6-14/17

has been fixed at very high rate of cooling from the liquid
state); A.M. Yuferev, on the process of re-crystallization;
N.N. Belousov and A.A. Dodonov, "Study of the Crystallization
and Properties of Non-Ferrous Alloys Under Applied Pressure";
Ye.D. Zakharov, on the dependance of mechanical properties of
ingots on the shape of the alveole during continuous casting
of aluminum alloys; N.L. Pokrovskiy and D.Ye. Ovsiyenko, on
the peculiarities of the crystallization of non-ferrous alloys
and the physico-chemical phenomena accompanying it; I.F. Ko-
lobnev and A.Ye. Semenova, on the effect of crystallization
conditions on the foundry properties and mechanical properties
of heat-resistant aluminum alloys at normal and high tempera-
tures; N.N. Sirota, Ye.A. Lekhtblau and Z.M. Stolyarenko,
"Crystallization of Metals and Alloys in Ultra-Sonic Field";
I.I. Teumin, "The Influence of Elastic Oscillations on the
Processes of Crystallization and the Technologic Properties
of Alloys; L.L. Silin and A.A. Yerokhin, "The Effect of Ultra-
Scund on the Crystallizing Metal in the Welding Puddle"; B.A.
Movchan, "Study of the Peculiarities of the Microscopic Che-
mical Heterogeneity in Alloys"; G.L. Petrov, "The Crystalliza-
tion and Chemical Heterogeneity of Welded Seams"; M.Kh. Shar-
Card 5/6   shorov and V.S. Sedykh, "The Effect of Non-Uniform Crystalliza-

Conference on the Crystallization of Metals   128-58-6-14/17

tion of the Welding Puddle on the Formation of Hot Cracks";
M.V. Simonenko, N.N. Belousov and V.S. Kolesnikova, on the
results of a study of the structure of copper alloys obtained
by a new galvano-diffusion method (crystallization in the
process of diffusion of zinc in gaseous state into solid cop-
per); N.I. Varich, on the results of X-ray analysis of the
parameters of aluminum alloys crystallized under low and high
piston pressures. The conference cited lack of coordination
of research work on crystallization, and very little practical
application of the research results by the industry. Basic
trends in research on the crystallization of metals were noted.
The next conference will convene in 1959.

AVAILABLE: Library of Congress
Card 6/6   1. Metals-Crystallization   2. Alloys-Crystallization

GORYUNOV, I.I.; MAKEL'SKIY, M.F.; DEMIDOVA, A.A.

Die casting. [Izd.] LONITOMASH 45:127-137 '58.   (MIRA 11:6)
(Die casting)

DEMIDOVA, A.A.

S/698/61/000/000/001/002
D040/D112

AUTHORS: Gulyayev, B.B.; Demidova, A.A.

TITLE: Akademiya nauk SSSR. Institut mashinovedeniya. Komissiya po
             tekhnologii mashinostroyeniya. An investigation of the properties
             of molding materials for refractory metal castings

SOURCE: Soveshchaniye po teorii liteynykh protsessov, 6th, 1960. Teoriya
             formovki; trudy soveshchaniya. Moscow, Izd-vo AN SSSR, 1961, 46-51

TEXT: The authors describe an experimental investigation into the properties of
different molding materials used for casting refractory metals, and of investment
molds made of these materials; these properties have not yet been studied suffi-
ciently. Mixes were prepared from molten zirconium dioxide, artificial corundum
(Al_2O_3), silicon carbide, fireclay, molten and pulverized quartz, and three diffe-
rent binders - KP(KS), hydrolyzed ethyl silicate, and waterglass treated with
ammonium chloride (NH_4Cl) by P.S.Pershin's method. [Abstracter's note: The chemi-
cal composition of the KS binder is not given and Pershin's method is not described].
Corundum, quartz sand, zirconium dioxide, fireclay (all of different mesh), and
silicon carbide with a 0.2 mm grain size were used as dusting powders. The linear
expansion, strength and permeability of the molds and the surface quality of the
castings were studied. The data show that the best results were obtained with
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An investigation of the properties S/698/61/000/000/001/002
D040/D112

multi-coat molds in which the first coat was of Al_2O_3 with KS for a binder, and the
following coats were of Al_2O_3 with waterglass treated with NH_4Cl. The mesh of the
dusting powder had a great effect on the mold porosity in molds of powder quartz
with ethyl silicate; when the grain size of the quartz was 0.2 mm, large grains
pierced the thin first coat. However, the grain size of the dusting powder did not
have such a great effect in coats of Al_2O_3 with a KS binder. Coats of ZrO_2 had the
highest porosity, regardless of the binder used. The permeability was studied with
a test instrument of the Usmanskiy zavod (Usman' Plant). The data are summarized
in tables and graphs. The test castings were made of chromium-base alloys. There
are 7 tables and 2 figures.

Card 2/2

DEMIDOVA, A. A. and GULYAEV, B. B.

"An Investigation of the Processes of Interaction of Molten Heat Resisting
Refractory Chemically Active Metals with the Mould"

report presented at the 7th Conference on the Interaction of the Casting Mould
and the Casting, sponsored b y the Inst. of Mechanical Engineering, Acad. Sci.
USSR, 25-28 January 1961.

S/840/62/000/000/001/003
E021/E435

AUTHORS: Demidova, A.A., Gulyayev, B.B.

TITLE: The interaction of high-melting point metals with the
           mould material at high temperatures

SOURCE: Vzaimodeystviye liteynoy formy i otlivki.
           Inst. mashinoved. AN SSSR. Ed. by B.B.Gulyayev.
           Moscow, Izd-vo AN SSSR, 1962, 243-252

TEXT: Experimental moulds were prepared from various
refactories.   Rods were prepared from chromium, an iron-
65% chromium alloy, titanium, niobium, molybdenum and tungsten.
The rods were brought into contact with the moulds and melted,
remaining in the molten state for 3 minutes.   The samples were
then examined visually and metallographically.   The thickness of
the contact zone was found and the structure of the zone was
studied by petrographic analysis.   The thicknesses (in mm)
of the contact zones are shown in Table 2.   It was shown that in
general the contact zone consisted of three layers: (1) a mineral
of a new form, (2) a layer of modified grains of the basic mould
material and individual nuclei of the new formation and
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The interaction of high-melting ...

S/840/62/000/000/001/003
E021/E435

(3) a layer of the basic material little changed.   The chemical
stability of the refactory materials increased in the following
order when casting titanium: zircon, Al_2O_3, MgO, ZrO_2, ZrC, TiC,
TiB_2.   For casting chromium the order was ZrO_2, SiC, spinel, MgO,
Al_2O_3, BeO, ZrC, TiC, TiB_2.   For niobium the order was ZrO_2,
Al_2O_3, ZrC.   Chamotte can be used for moulds when casting
ferrochrome.   Fine grained refactory material should be used for
casting high melting point metals.   There are 5 figures and
7 tables.

Table 2

Mould material	Fe-65Cr	Cr	Ti	Nb	Mo	W
Commercial Al_2O_3	4.8	-	-	-	-	-
Corundum	1.55	1.50	6.6	4.8	6.5	-
Chamotte	2.0	8.4	-	-	9.5	-
Fused ZrO_2	5.3	7.8	6.4	8.5	9.3	12.0
$ZrO_2 \cdot SiO_2$	-	-	7.5	11.8	-	-
Fused MgO	3.4	5.4	7.3	-	-	12.0
MgO bricks	-	4.3	6.3	-	-	-

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The interaction of high-melting ...   S/840/62/000/000/001/003
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Table 2 (continued)

Mould material	Fe-65Cr	Cr	Ti	Nb	Mo	W
Pure MgO	-	5.0	-	-	-	-
Cr$_2$O$_3$	5.4	-	-	-	-	-
TiO$_2$	-	-	-	-	-	-
CeO$_2$	-	12.0	12.0	12.0	-	-
BeO	-	11.2	11.8	-	-	-
Spinel, CaO·CrO$_3$	-	1.9	-	-	-	-
MgOCr$_2$O$_3$	-	6.48	-	-	-	-
Chrome-magnesite	-	6.72	-	-	-	-
SiC	1.55	-	5.5	-	-	-
TiC	-	7.2	9.5	-	-	-
ZrC	-	<1	<1	-	-	-
TiBr	-	<1	<1	1.5	-	-
Powdered quartz	10.0	<1	<1	-	-	-
Fused quartz	4.5	-	12.0	12.0	-	-

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ACCESSION NR: AT4016065   S/2698/63/000/000/0217/0222

AUTHOR: Demidova, A. A.; Gulyayev, B. B.

TITLE: Effect of the casting mold on the mechanical properties of refractory metals

SOURCE: Soveshchaniye po teorii liteyny*kh protsessov. 8th, 1962. Mekhanicheski-ye svoystva litogo metalla (Mechanical properties of cast metal). Trudy* soveshcha-niya. Moscow, Izd-vo AN SSSR, 1963, 217-222

TOPIC TAGS: refractory metal, titanium alloy, chromium alloy, casting, cast metal mechanical property, casting mold, casting mold material

ABSTRACT: The authors studied the effect of the casting mold material on the deterioration of cast alloys containing titanium and chromium. Casting was per-formed in a special laboratory unit in test molds. The test mold material (SiO_2, TiO_2, Al_2O_3, CeO_2, ZsO_2, MgO, $ZrSiO_4$ or graphite) significantly influenced the gas content (H_2, N_2 and O_2) of the titanium and chromium alloys and this, in turn, determined the mechanical properties of the cast metal. Orig. art. has: 5 figures and 3 tables.

ASSOCIATION: none
Card 1/@

SLAVINSKAYA, N.A.; GRIBOVA, Ye.I.; DEMIDOVA, G.G.; KAMENETSKAYA, S.A.; PSHEZHETS-
KIY, S.Ya.

Effect of ozone on the kinetics of butane oxidation. Zhur.fiz.khim. 37
no.7:1549-1556 Jl '63.   (MIRA 17:2)

1. Fiziko-khimicheskiy institut imeni Karpova, Moskva.

GULYAYEV, B.B.; MAGNITSKIY, O.N.; DEMIDOVA, A.A.; Prinimali
    uchastiye: KAPLUNOVSKIY, G.A.; KUKKONEN, E.Ya.; BUTALOV,
    L.V., kand. tekhn. nauk, retsenzent

[Castings of high-melting metals] Lit'e iz mugoplavkikh me-
tallov. Moskva, Izd-vo "Mashinostroenie," 1964. 291 p.
                                    (MIRA 17:5)

L 19740-65   EWP(e)/EWT(m)/EWP(v)/EWP(t)/EWP(b)   IJP(c)   JD/MLK

ACCESSION NR: AT4048343   S/0000/64/000/000/0150/0153

AUTHOR: Kukkonen, E. Ya.; Kaplunovskiy, G. A.; Demidova, A. A.; Magnitskiy, O. N.

TITLE: The effect of gases on the quality of titanium alloy castings

SOURCE: AN SSSR. Komissiya po tekhnologii mashinostroyeniya. Gazy v litom metalle (Gases in cast metals). Moscow, Izd-vo Nauka, 1964, 150-153

TOPIC TAGS: cast titanium, titanium alloy casting, blowhole formation, gas saturation, titanium porosity, oxygen adsorption, nitrogen adsorption, hydrogen adsorption, mold material, mold temperature

ABSTRACT: The authors note that the principal requirement in the production of titanium castings is to safeguard the metal against contamination, particularly by oxygen, hydrogen and nitrogen. This requirement predetermines the basic specifications of the entire technological process of the production of titanium alloy castings. As mold materials only the most chemically stable oxides can be used: zirconium dioxide, electrocorundum and magnesite. The binding materials must contain a minimum amount of those components which react actively with titanium. The metal is melted in a vacuum in a cooled crucible with a lining of the same alloy as that which is being melted. Particularly attention was paid in this article to: 1), the effect of the mold materials and the mold temperature during teeming on

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the gas content and the mechanical properties of the metal of the castings; 2) the
effect of the metal of the consumed electrode and of other factors on the develop-
ment of blowholes in thin-walled titanium castings. The effect of the mold ma-
terials was studied on the basis of castings prepared by the melted model method,
with the gas content in the castings determined by the vacuum-smelting method.
The basic titanium contained 0.0150% oxygen. The mold material of lowest quality,
from the point of view of minimal oxygen contamination of the metal, was found to
be zirconium dioxide and melted magnesite. The higher the temperature at the me-
tal - mold boundary, the more intensive the interaction, the increase in the oxy-
gen content in the casting metal as the temperature of molds of different refrac-
tory materials was increased being extremely significant. The authors give 150 -
250C as the optimal mold temperature. The distribution of gases throughout the
section of the casting was investigated by measuring the microhardness, with the
discovery that the surface layers of the casting showed the highest degree of con-
tamination. A study was made of the effect of different technological factors on
the susceptibility of the casting to the development of blowholes by means of
casting disks of varying thickness, with the disks so obtained checked for the
presence of blowholes by X-ray. Thin-walled castings were found to be especially
vulnerable to this type of gas-originated surface flaw. This statement is develop-
ed in detail in the article. A comparison of disks obtained from metal smelted in
a vacuum at $1 \cdot 10^{-1}$ and at $1 \cdot 10^{-3}$ mm Hg or from metal which had undergone special
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vacuum degasification indicated that the basic charge has a considerable effect on
the formation of blowholes in the castings: with degasified metal, the quantity
of blowholes decreases noticeably. In disks without blowholes, defects in the form
of shrinkage porosity are observed, while this type of defect is absent when blow-
holes are present. The authors also state that the number of blowholes in the
casting depends on the configuration of the casting and the method employed in
filling the mold. Those factors were found to be favorable which promote an up-
ward direction in the filling of the mold and the crystallization of the metal.
Still further details are discussed in the article. "I. P. Bashkov took part in
the work." Orig. art. has: 2 tables and 2 figures.

ASSOCIATION: none

SUBMITTED: 20May64   ENCL: 00   SUB CODE: MM

NO REF SOV: 000   OTHER: 000

Card   3/3

L 19758-65   EWT(m)/EWP(t)/EWP(b)   IJP(c)   JD/JG/MIX

ACCESSION NR: AT4048345   S/0000/64/000/000/0167/0171   B

AUTHOR: Kaplunovskiy, G. A.; Kukkonen, E. Ya.; Demidova, A. A.; Magnitskiy, O. N.;
Gulyayev, B. B. (Doctor of technical sciences, Professor)

TITLE: The effect of a gaseous medium during melting and teeming on the quality of
cast chromium

SOURCE: AN SSSR. Komissiya po tekhnologii mashinostroyeniya. Gazy* v litom metalle
(Gases in cast Metals). Moscow, Izd-vo Nauka, 1964, 167-171

TOPIC TAGS: cast chromium, gas saturation, chromium melting, chromium teeming,
chromium brittleness, oxygen adsorption, hydrogen adsorption, nitrogen adsorption, rare
earth admixture

ABSTRACT: After noting that the principle cause of chromium brittleness is gaseous im-
purities, the authors report the results of studies aimed at selecting the optimal techno-
logical conditions for the smelting of chromium, from the point of view of ensuring a mini-
mum gas content in the cast metal. The metal was melted in an OKB-496m high-vacuum
induction furnace in a rammed crucible of zirconium dioxide. As the basic material, un-
refined chromium was employed with the following composition: 0.024-0.030% H_2, 0.3% O_2,

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L 15758-55
ACCESSION NR: AT4043345

0.002-0.0050% N₂. The experimental melts were made in an inert argon atmosphere, since due to the high chromium vapor pressure at the melting temperature (63.8 mm Hg), it is not possible to melt the metal in a vacuum. For the purpose of decomposing the nitrides and removing the adsorbed gases, the chromium was aged at 750, 1200 and 1400C for 30 minutes at each temperature, and also in the melted state. The chromium was poured into a metal mold in order to exclude any effect of the mold material on the gas content in the castings. Further details regarding the technique of the experiment are given in the paper. Conditions which ensure the absence of coronal discharge in the vacuum at high voltages were also determined during the development of specific smelting conditions. The process of melting 5 kg of chromium lasted up to 5 minutes. A table is given showing the content of oxygen and nitrogen in the cast chromium as a function of temperature and duration of exposure. Oxygen content was found to increase somewhat, in comparison with the base content, together with the time of aging. The nitrogen content decreased with aging for 30 minutes at 750-1200C. Experiments showed that the optimal aging regime for chromium is 1200C and 30 minutes. In the cast metal the hydrogen content stood at 0.0004-0.0009%. It was also found that, all other conditions being equal, the content of non-metallic admixtures of the oxide type is approximately half as high (0.301%) after the fourth melting as after the first (0.60%). For the purpose of studying the effect of the material of the mold on the gas-saturation of the chromium, samples were poured into

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ACCESSION NR: AT4048345

0

molds of different refractory materials, and a table is given in the article illustrating the
dependence of the oxygen content in the castings on the mold material used. The authors
indicate that the microhardness of the chromium is not changed by the mold material. The
use of rare-earth elements to enhance the mechanical properties of cast chromium is dis-
cussed in some detail. Data are presented which indicate that the content of non-metallic
inclusions in cast chromium without admixtures reaches 0.361%, while an analysis of the
non-metallic inclusions showed the presence of oxides of the Cr_2O_3 type and oxides of the
rare-earth elements. In this way, the rare-earth elements are found to have a refining
effect. The article concludes with a brief discussion of a special study which was made to
determine the optimal argon pressure for high-quality stock. The authors show that the
structure of chromium, smelted and teemed at an argon pressure of 600 mm Hg, is finer
than that of chromium poured at 300, 60-90, and 1.2 mm. According to some writers, a
fine-grain structure reduces the temperature threshold of chromium brittleness. Orig. art.
has: 3 figures and 3 tables.

ASSOCIATION: None

SUBMITTED: 20May64   ENCL: 00   SUB CODE: MM

NO REF SOV: 002   OTHER: 000

Card 3/3

L 24523-65   EWT(m)/EPF(a)-2/EWP(t)/EWP(b)   Pu-4   IJP(c)/AS(mp)-2/AFWL/SSD/AFETR/
ASD(f)-2/ASD(m)-3   JD/JJ
ACCESSION NR AM4040600   BOOK EXPLOITATION   S/

Gulyayev, B. B.; Magnitskiy, O. N.; Demidova, A. A.   BH

Refractory metal casting (Lit'ye iz tugoplavkikh metallov), Moscow, Izd-vo
   "Mashinostroyeniye", 1964, 291 p. illus., biblio. 2,000 copies printed.

TOPIC TAGS: metallurgy, refractory metal casting, chromium, titanium, molybdenum,
niobium, refractory metal

PURPOSE AND COVERAGE: This book covers Soviet and foreign experience and results of
research in the casting of refractory metals. Casting from chromium, titanium,
molybdenum, niobium and other refractory metals is examined. The basic sections of
the book deal with melting and pouring, interaction of metals with gases, refrac-
tory and molding materials, design of vacuum equipment, development of casting pro-
cesses, cast mechanical and service properties of cast refractory metals. The book
is intended for engineers and technicians in industry and research organizations.
It can also be useful to students in casting specialties.

TABLE OF CONTENTS [abridged]:

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Ch. I. General characteristics of refractory metals -- 5
Ch. II. Interaction of refractory metals with the surrounding medium at high
    temperatures -- 31
Ch. III. Equipment for melting and pouring refractory metals -- 100
Ch. IV. Technology of preparing castings from refractory metals -- 165
Ch. V. Properties of castings based on refractory metals -- 249

SUB CODE: MM   SUBMITTED: 14Feb64   NR REF SOV: 103

OTHER: 096

Card 2/2

ZHOVTYY, I.F.; YEMEL'YANOVA, N.D.; FEDOROVA, L.V. [deceased]; RYZHUK,
      T.I.; LEONOV, Yu.A.; SUCHEVSKIY, P.T.; MOSKALENKO, V.V.;
      KOZLOVSKAYA, O.L.; DEMIDOVA, A.A. [deceased]; ANIKEYEV, I.K.;
      CHIPIZUBOVA, P.A.; PROLIP'YEV, V.N.

      Materials for a study of the trombiculid mites of Siberia and
      the Far East. Izv.Irk.gos.nauch.-issl.protivochum.inst. 16:
      156-172 '57.   (MIRA 13:7)
                        (SIBERIA, EASTERN--MITES)

LESKOVA, Ye.S.; REZNIKOVA, S.A.; DEMIDOVA, A.D.

Morphological and cytological study of Senecio rhombifolius and
Senecio platyphylloides. Biul. Glav. bot. sada no.55:106-109 '64.
(MIRA 18:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut lekarstvenrykh
i aromaticheskikh rasteniy.

DEMIDOVA, A. N., GROSHEV, L. V., and ADYASEVICH,

"Thermal-Neutron Capture Gamma Rays," a paper presented at the Atoms
for Peace Conference, Genev a, Switzerland, 1955

DEMIDOVA, Agrippina Mikhaylovna; LAGOVSKAYA, Ye.A., red.; BALDINA, N.F.,
    tekhn.red.

[Protect your health; hygiene at school and at work] Beregi
zdorov'e; o gigienicheskom rezhime v shkole i na proizvodstve.
Moskva, Gos.izd-vo med.lit-ry, 1960. 30 p.

(MIRA 14:2)

(HEALTH)   (FIRST AID IN ILLNESS AND INJURY)

KREMER, Aleksandr Yakovlevich, kand. med. nauk; DEMIDOVA, A.M., red.;
   BALDINA, N.F., tekhn. red.

   [Nocturnal emuresis]Nochnoe nederzhanie mochi. Moskva, Medgiz,
   1962. 19 p.   (MIRA 15:12)
                   (URINE---INCONTINENCE)

DEMIDOVA, Agrippina Mikhaylovna; LAGUTINA, Yo.V., red.; BUL'DYAYEV, N.A., tekhn. red.

[Guard your health; on the 40th anniversary of the Pioneers]
Beregi zdorov'e; k 40-letiiu pionerskoi organizatsii imeni
V.I.Lenina. Izd.2., perer. Moskva, Medgiz, 1962. 30 p.
                                                    (MIRA 15:9)
          (CHILDREN--CARE AND HYGIENE)
          (PIONEERS (COMMUNIST YOUTH))

DEMIDOVA, Agrinina Mikhailovna; SKORBILINA, T.N., red.; NEYMAN, M.I., red.; BASHMAKOV, G.M., tekhn. red.

[Sleep and dreams] Son i snovideniia. Moskva, Medgiz, 1963.
29 p.   (MIRA 16:10)
          (SLEEP)   (DREAMS)

KUZ'MINA, A.V.; DEMIDOVA, A.N.

Galvanic cell with an aluminum anode activated by hypochlorite
in alkaline solution. Zhur. prikl. khim. 38 no.5:1038-1043
My '65.   (MIRA 18:11)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.

DEMIDOVA, A. N.

"On the Physical Characteristics of Subdwarf Stars." Cand Phys-Math Sci, Main Astronomical Observatory, Acad Sci USSR, Leningrad, 1954. (KL 1, 1 Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (13) SO: Sum. 598, 29 Jul 55

DEMIDOVA, A.N.

Spectrophotometric investigation of subdwarf stars.   Izv.GAO 20
no.2:111-140 '56.   (MIRA 13:5)
          (Stars--Spectra)

S/035/60/000/010/011/021
A001/A001

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 10, p. 33, # 9989

AUTHOR: Demidova, A. N.

TITLE: On Observations of Star Scintillations at Pulkovo With an АЗТ-7 (AZT-7) Telescope

PERIODICAL: Tr. Soveshchaniya po issled. mertsaniya zvezd, 1958, Moscow-Leningrad, AN SSSR, 1959, pp. 123-131. Discuss. pp. 181-182

TEXT: Scintillations of stars were observed at Pulkovo with an AZT-7 telescope with the purpose of determining the law of changing the scintillation amplitude with the zenith distance and checking an existence of correlations between scintillation parameters and stellar image quality and meteorological conditions during observation instants. Maximum amplitudes of luminosity changes M and root-mean-square amplitudes δ were measured at the telescope entrance apertures 30 and 200 mm. Errors in measuring amplitudes were estimated. The following results were obtained: 1) The law of scintillation amplitude variation

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S/035/60/000/010/011/021
A001/A001

On Observations of Star Scintillations at Pulkovo With an АЗТ-7 (AZT-7)
Telescope

with the changing of star zenith distance was found separately for every night
of observations; it is expressed by the formula: $M = M_0 (\sec z)^\alpha$. Numerical
values are tabulated. 2) The variation of scintillation amplitudes with the
changing of the telescope entrance aperture diameter for $z < 60°$ was found in
the form: $M (\%) (30 \text{ mm}) = 127 (\sec z)^{1.0}$; $M (5) (200 \text{ mm}) = 44 (\sec z)^{1.3}$. The
method of observations made it possible to correlate scintillation amplitudes
with the quality of stellar images. This correlation is revealed better when
observations are made with a telescope having small dimensions of the entrance
aperture. Scintillations were recorded by means of light filters in a narrow
spectral range. Results are tabulated. There are 7 references.

                                                         L. N. Zhukova

Translator's note: This is the full translation of the original Russian abstract.

Main Astronomical Observatory AS USSR

Card 2/2

S/035/60/000/010/012/021
A001/A001

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 10,
p. 33, # 9990

AUTHORS: Demidova, A. N., Bronnikova, N. M., Vasil'yeva, G. Ya.

TITLE: Results of Observations of Star Scintillation at Anapa

PERIODICAL: Tr. Soveshchaniya po issled.mertsaniya zvezd, 1958, Moscow-Leningrad,
             AN SSSR, 1959, pp. 131-135. Discuss. 181-182

TEXT: Results of observations of star scintillation at Anapa during April
to June 1957 are presented. The observations were carried out according to a
unified program with the Pulkovo Observatory (with the similar equipment). The
law of scintillation amplitude variation with star zenith distance is expressed by
the formula: $M = M_0(\sec z)^{\alpha}$ where $0.7 \leq \alpha \leq 1.5$; $\alpha_{av} = 0.9$ ($D = 200$ mm). The
scintillation amplitude of a star in zenith $M_{0\ av} = 52\%$. The correlation of
scintillation amplitudes with the quality of diffraction images has shown that no
dependence exists between these quantities. (Contrary results were obtained at
Pulkovo). An increase of scintillation amplitudes is observed with a temperature
increase at the Earth's surface.
Translator's note: This is the full translation of the original Russian abstract.
Card 1/1

AUTHORS: Bystrova, N. V., Demidova, A. N.

TITLE: ·   The scale for estimating the quality of the image of the Sun

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 5, 1962, 47,
              abstract 5A358 ("Solnechnyye dannyye", 1960 (1961), no. 11, 78-79)

TEXT: A five-point scale, calibrated by Danjon, exists for the estimate
of the quality of star images. An analogous scale is suggested by the authors
for the estimate of the images of the Sun. The outer appearance of the spot
penumbra filaments is used as a criterion, since their width does not exceed the
width of the line diffraction image in a telescope. The scale is calibrated by
referring to stars; for this purpose, photographs of α Lyrae and of the Sun
were taken, practically simultaneously, with the meniscus telescope of Pulkovo.
A description is given of the filament aspect corresponding to each point of the
scale.

R. Teplitskaya

[Abstracter's note: Complete translation]

Card 1/1

3.5140 (1041)

AUTHOR: Demidova, A. N.

TITLE: Scintillation of stars (observed) at Pulkovo

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 9, 1961, 32,
            abstract 9A247 ("Izv. Gl. astron. observ. v Pulkove", 1960, v. 21,
            no. 6, 2-11, Engl. summary)

TEXT: The author presents the results of observations of stellar scintil-
lations with a 200-mm АЗТ-7 (AZT-7) telescope, an АФМ-3 (AFM-3) electrophoto-
meter, and an Н-10 (N-10) oscillograph. A law was derived for variation with
z of maximum scintillation amplitude for Pulkovo in spring 1958. The maximum
scintillation amplitude is well correlated with the visual estimate of image
quality according to the Danjong-Coudere scale. The author presents data on the
course of scintillation amplitude variation in dependence on the diameter of the
telescope input aperture; using these data the author calculates the length of
fluctuation density wave in the effective turbulent layer of the Earth's atmo-
sphere. It turned out to be equal to 35 cm, which agrees well with the data of
other authors. There are 11 references.   T. Derviz
[Abstracter's note: Complete translation]
Card 1/1

DEMIDOVA, A. N. ; BYSTROVA, N. V.

Photoelectric determination of the size of stellar image. Izv.
GAO 21 no.6:12-29 '60.   (MIRA 13:9)
          (Stars—Photographic measurments)

S/035/62/000/006/011/064
A001/A101

AUTHORS: Bystrova, N. V., Demidova, A. N.

TITLE: Location of atmospheric non-uniformities deforming the solar limb
             during clear and cloudy days

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 6, 1962, 52,
             abstract 6A391 ("Solnechnyye dannyye", 1961, no. 3, 73)

TEXT: Turbulent layers in the Earth's atmosphere are located, most often,
at an altitude of 1 - 2 km and below, independent of the presence or absence of
clouds at this altitude. They can be detected by day during observations of
deformations in the Sun's limb.

                                        N. B.

[Abstracter's note: Complete translation]

Card 1/1

37325
S/169/62/000/004/033/103
D228/D302

3,5150

AUTHORS: Bystrova, N. V., Demidova, A. N. and Lazareva, N.A.

TITLE: The jump of the air refraction index in the optical
             range at the peplopause level

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 4, 1962, 25, ab-
             stract 4B165 (Solnechnyye dannyye, no. 8, 1961,77-78)

TEXT: The heights of the atmospheric layer with a refraction in-
dex, differing from that of the surrounding air, were determined
from observations on the set displacement of the deformations of
the sun's rim. Comparison with the data of temperature-wind sound-
ing showed that the heights of the layer with an anomalous index
of refraction correlate well with those of the boundary layer.
/‾Abstracter's note: Complete translation._/

Card 1/1

40233
S/169/62/000/007/087/149
D228/D307

9.9300

AUTHORS: Bystrova, N. V. and Demidova, A. N.

TITLE: Possibility of using solar observations in investigat-
             ing long-range tropospheric ultrashort-wave propaga-
             tion

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 10-11,
             abstract 7B57 (Solnechnyye dannyye, no. 12, 1961
             (1962), 77-78)

TEXT: Attention is attracted by the fact that the slightly eleva-
ted layers, detected with sudden refractive-index changes in tropo-
spheric USW-propagation research and in optical observations of the
sun's disc, have the same heights above the ground surface (about
0.3 - 3.0 km). It is supposed that the appearance of these layers
is independent of the presence or absence of visible clouds. The
average thickness of the layers is 30 m. It is recommended that
simultaneous observations should be made in optical and ultrashort-
wave ranges to establish the identity of the detected layers. When

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Possibility of using ...

S/169/62/000/007/087/149
D228/D307

there is correlation between the optical and the tropospheric ob-
servations, simple optical methods permit the disclosure of these
layers and the determination of the details of their fine struc-
ture (their division into a number of sublayers). The methodical
peculiarities of such tests are discussed. /Abstracter's note:
Complete translation./

Card 2/2

S/035/62/000/003/013/053
A001/A101

3,1540

AUTHORS: Bystrova, N. V., Demidova, A. N.

TITLE: The effect of atmosphere turbulence on the solar image

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 3, 1962, 53,
             abstract 3A391 ("Izv. Gl. Astron. observ. v Pulkove". 1961, v. 22,
             no. 4. 89-98, English summary)

TEXT: Observations, mainly visual, of various manifestations of atmos-
pheric turbulence effect on the solar image were carried out at Pulkovo with a
20-cm meniscus telescope with a plane-parallel glass aluminum-coated filter of
the same size in the 10-m equivalent focus. The results of simultaneous observa-
tions with this instrument of λ Lyr and the Sun with exit pupils of 1 and 0.4 mm
are presented. A certain form of penumbra filaments of sunspots corresponds,
according to Danjon. to every estimate of the quality of star image. The magni-
tudes of star tremor and shift of the solar surface section adjacent to the
edge with a ∼9'-chord were estimated from the ocular cross lines and proved to
be approximately equal. A conclusion was drawn that the upper boundary of
location of corresponding non-homogeneities is at an altitude of ∼100 m.

Card 1/2

The effect of atmosphere turbulence ...

S/035/62/000/003/013/053
A001/A101

Position angles of shift direction of non-homogeneities over the solar edge are determined by means of a guide (D = 50 mm) in projection on the screen, the time of passage is estimated, and the azimuths of this displacement are calculated. Using velocities and directions of the wind, the time is calculated which non-homogeneities would take for the transit across the Sun's disk in a horizontal layer at various altitudes. A comparison of the observed azimuth and time with those calculated from meteorological data makes it possible to determine the altitudes of non-homogeneities. There are 15 references.

From authors' summary

[Abstracter's note: Complete translation]

Card 2/2

DEMIDOVA, A.N.; BYSTROVA, N.V.

Height of atmospheric layers distorting the moon's limb. Astron.tsir.
no.231:26 N '62.   (MIRA 16:4)

1. Glavnaya astronomicheskaya observatoriya AN SSSR.
        (Moon—Observations)   (Atmosphere, Upper)